

CLAIMS

We claim:

1. An isolated polynucleotide encoding CP1 from a gram positive microorganism.
- 5 2. The polynucleotide of Claim 1 wherein CP1 has the amino acid sequence shown in Figures 1A-1B.
3. An isolated CP1 encoding nucleic acid having the nucleic acid sequence as shown in Figure 1.
- 10 4. An isolated CP1 from a gram-positive microorganism.
5. The isolated CP1 of Claim 4 having the amino acid sequence as shown in Figures 1A-1B.
- 15 6. An isolated polynucleotide encoding CP2 from a gram positive microorganism.
7. The polynucleotide of Claim 6 wherein CP2 has the amino acid sequence shown in Figures 5A-5B.
- 20 8. The isolated CP2 encoding nucleic acid having the sequence as shown in Figures 5A-5B.
9. An isolated CP2 from a gram-positive microorganism.
- 25 10. The isolated CP2 of Claim 9 having the amino acid sequence as shown in Figures 5A-5B.
11. A gram-positive microorganism having a mutation or deletion of part or all of the
30 gene encoding CP1 said mutation or deletion resulting in the inactivation of the CP1 proteolytic activity.
12. A gram-positive microorganism having a mutation or deletion of part or all of the
35 gene encoding CP2 said mutation or deletion resulting in the inactivation of the CP2 proteolytic activity.

13. A gram-positive microorganism having a mutation or deletion of part or all of the gene encoding CP3 said mutation or deletion resulting in the inactivation of the CP3 proteolytic activity.
14. The gram-positive microorganism according to Claims 11, 12 or 13 that is a
5 member of the family *Bacillus*.
15. The microorganism according to Claim 14 wherein the member is selected from the group consisting of *B. licheniformis*, *B. lentus*, *B. brevis*, *B. stearothermophilus*, *B. alkalophilus*, *B. amyloliquefaciens*, *B. coagulans*, *B. circulans*, *B. lautus* and
10 *Bacillus thuringiensis*.
16. The microorganism of Claim 11, 12 or 13 wherein said microorganism is capable of expressing a heterologous protein.
- 15 17. The host cell of Claim 16 wherein said heterologous protein is selected from the group consisting of hormone, enzyme, growth factor and cytokine.
18. The host cell of Claim 17 wherein said heterologous protein is an enzyme.
- 20 19. The host cell of Claim 15 wherein said enzyme is selected from the group consisting of a proteases, carbohydrases, and lipases; isomerases such as racemases, epimerases, tautomerases, or mutases; transferases, kinases and phosphatases.
20. A cleaning composition comprising a cysteine protease selected from the group
25 consisting of CP1, CP2 and CP3.
21. An expression vector comprising nucleic acid encoding a cysteine protease selected from the group consisting of CP1, CP2 and CP3.
- 30 22. A host cell comprising an expression vector according to Claim 21.